NASA Facts

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JOHN C. STENNIS SPACE CENTER

America's Largest Rocket Test Complex

Vapor billows from the A-2 Test Stand during the 1,000,000th second of Space Shuttle Main Engine test-firing and flight operations.

For more than four decades, NASA John C. Stennis Space Center (SSC), located in south Mississippi, has served as NASA's rocket propulsion testing ground. Today, the center provides test services not only for America's space program, but also for the Department of Defense and the private sector.

SSC is NASA's program manager for rocket propulsion testing. As such, it manages NASA's test assets and activities for rocket propulsion testing, including facilities at the Marshall Space Flight Center in Alabama, the White Sands Test Facility in New Mexico and the Glenn Research Center's Plum Brook Station in Ohio. SSC's state-of-the-art test facilities include the A, B and E Complexes, designed for rocket propulsion testing from component to engine to stage-level. The unique 125,000-acre acoustical buffer zone that surrounds SSC is considered a national asset and enables testing of large-scale rocket engines and components.

SSC was initially established as a national testing center to flight-certify all first and second stages of the Saturn V rocket for the Apollo manned lunar landing program. Since 1975, the center's primary mission has been testing the main engines that propel the Space Shuttle during its 8½-minute ascent to orbit. SSC's versatile, three-stand E Test Complex with its seven separate test cells serves as a component test facility for future generation rocket engines.

Applying Earth Sciences

SSC's Earth Science Applications Directorate leads NASA's efforts to help solve problems on Earth related to homeland security, agricultural efficiency, disaster preparedness and coastal management. Through the use of NASA's Earth science research results, remote sensing and other technical capabilities, the directorate at SSC bridges the gap between Earth science research results and the use of data to help its partner agencies (such as the Federal Emergency Management Agency and the U.S. Department of Agriculture) make better informed decisions. Scientists at SSC use remote sensing technologies and their expertise to expand and improve prediction capabilities in weather and climate. Through better prediction, they can speed response times to natural hazards and man-made disasters.

A satellite image of the Louisiana-Mississippi Gulf Coast taken by the Landsat Thematic Mapper.

Technology Development

The Technology Development and Transfer Office (TDTO) supports activities at SSC. The TDTO researches and develops new technologies. It also assesses, certifies and acquires technologies from outside sources. The goal of technology development is to improve the safety, efficiency and effectiveness of the Propulsion Test programs, Earth Science Applications and SSC's institution.

Through joint development partnerships, the TDTO reduces NASA's mission-related technology life-cycle costs, transfers technology to the private sector and maximizes the return on NASA's technology investment. Four of the development and application programs used to support these efforts are: Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), Dual Use Technology Development and Center Director's Discretionary Fund (CDDF).

A Unique Federal and Commercial City

An aerial view of the administrative complex at Stennis Space Center.

NASA and more than 30 resident agencies share the cost of owning and operating the facility, making it more cost-effective for each agency to accomplish its independent mission.

The Naval Meteorology and Oceanography Command is headquartered at SSC. The command administers a worldwide organization of 3,000 personnel, with nearly one-third of them at SSC, making it the largest concentration of oceanographers in the world. The Naval Oceanographic Office at SSC collects and processes ocean data using ships, aircraft, remotely operated vehicles, satellites, buoys and mobile weather stations to acquire data used in oceanographic products. The Naval Research Laboratory (NRL) is the Navy's corporate laboratory. The NRL at SSC conducts exploratory and advanced technological development, performs research and serves as the lead for mapping, charting and geodesy research for the National Imagery and Mapping Agency. The training ground for the Department of Defense's agent for conducting riverine warfare around the world is Special Boat Team (SBT) 22. SBT 22 and the headquarters of the Naval Small Craft Instruction and Technical Training School are located at SSC.

The state of Mississippi is developing a new high-tech aerospace park at SSC with the first occupant being the Lockheed Martin Mississippi Space and Technology Center. Additionally, the Mississippi Army Ammunition Plant Industrial Complex has become a thriving industrial park accommodating high-tech and industrial tenants. It is home to commercial and government endeavors alike, such as The Boeing Company's new RS-68 rocket engine assembly facility.

With this effective cost-sharing philosophy and its reputation for state-of-the-art test facilities, highly trained, professional work force and commitment to safety and customer satisfaction, SSC serves as a model of government efficiency, showing American taxpayers positive returns on their investments.

Providing Economic and Community Impact

With a work force of nearly 4,500, including more than 1,600 scientists and engineers, the center strongly influences the surrounding communities. In 2003, SSC's direct global economic impact totaled $755 million, with a $533 million impact on Mississippi and Louisiana communities within a 50-mile radius of the center. SSC's community involvement includes participation in the Combined Federal Campaign fund-raising drive, hosting the annual Special Olympics, serving as a Civil Defense shelter and conducting workshops and providing materials for educators through the Educator Resource Center.

StenniSphere, the visitor center at SSC, offers free tours of America’s largest rocket test complex. Visitors to StenniSphere can see a Moon rock along with a Space Shuttle Main Engine, an Apollo Saturn V engine and artifacts including Apollo 13 Astronaut Fred Haise's space suit.

SSC employs more than 1,600 scientists and engineers.

For more information about Stennis Space Center, contact the NASA Public Affairs Office at (228) 688-3341, or access the Stennis Space Center Home Page on the World Wide Web at www.ssc.nasa.gov